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Honorable Birch Bayh, Chairman
Select Committee on Intelligence
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

I recently asked my analysts to draw together, on an unclassified basis, a short background paper on Soviet map distortion. This was done in response to a request from a Senator. Thinking it might be of interest to you, I am enclosing a copy of that paper. Should you wish to go into the matter further on a classified basis, we would be pleased to oblige.

Yours sincerely,

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STANSFIELD TURNER

Enclosure

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SOVIET MAP DISTORTION

Soviet maps released for general distribution have undergone significant changes since the late 1950s. The generalization of detail and distortion of geographic location noted on the maps released after 1958 constitute an abrupt reversal of the steadily increasing standards of excellence which had previously characterized the development of Soviet cartography and had won universal respect for Soviet maps.

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This costly and, in some respects, bizarre degradation program apparently results from a tightening of security control over cartographic products. In addition to the previous security practices of either omitting sensitive information, or imposing rigid controls over dissemination, the new policy incorporated intentional falsification.

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In 1958, editions of the regional political-administrative maps began to show basic changes in content. Many settlements, located on previous editions of the maps were omitted. In showing the remaining settlements, dots and circles were frequently substituted for the shaded patterns that had previously outlined the extent of the larger towns. Probably the most significant change was the

elimination of the grid of geographic coordinates. This practice, which has been noted on several earlier maps of Moscow Oblast and Belorussian SSR, became the rule on all the regional maps published after July 1958.

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In 1960, issuance of the regional political-administrative maps ceased suddenly and was not resumed, with two minor exceptions, until 1964. That year marked the appearance of the first of a new series of political-administrative maps, which have subsequently covered practically all of the Soviet Union. Strikingly colorful, the new editions have a distinctive and attractive appearance. Map data, however, are even more highly generalized than before. Boundaries, roads, railroads, rivers, and coastlines are all portrayed schematically--and are often distorted as well--and the omission of coordinates continues.


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Geographic coordinates now appear on smaller-scale atlas maps, schematic school maps, and the annual political-administrative maps at 1:4,000,000, 1:5,000,000 and 1:8,000,000 which show the Soviet Union as a whole. A new grid of latitude and longitude lines has replaced the grid that had appeared on the earlier editions of these maps. The intervals at which the grid lines are spaced were usually


changed, so visual comparison between the old and new grids is difficult, and detection of the new grid by a casual user is unlikely. The older maps clearly labeled the map projection grid as the Kavrayskiy Conic. The newer maps do not identify the projection. This deletion in itself is significant, because past Soviet practice has been to publicize any new cartographic projection developed in the USSR. At present, the specific type of projection cannot be identified because it is mathematically inconsistent.

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A legitimate change in projection would require a corresponding recompilation of base data so that each town and stream would maintain its true relationship on the geographic grid. The base data were redrafted, but analysis indicates that the new Soviet compilations not only incorporated more generalizations, but also introduced random mislocation both in direction and distance. Locational shifts amount to as much as five miles in the European USSR, and up to 25 miles in other parts of the country. The nature of the discrepancies can be illustrated by comparing the base data on the older maps, which are known to be correct, with the base data on the new maps (using the geographic grids as a control). These distortions are

present on all recent Soviet maps showing this area, even schematic wall maps for classroom use. The 1967 edition of the Soviet World Atlas, published in both Russian and English in celebration of the 50th anniversary of the Communist Revolution, provides a striking example of distortion in the area around Nevel', a city west of Moscow near the boundary of the Russian and Belorussian republics. Figure 1 compares the accurate representation in the first edition of the World Atlas issued in 1954 with the distorted version in the 1967 Atlas. 

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Hydrographic charts issued since 1964 also show distortion, although of a much smaller order of magnitude--approximately a half mile. Land-feature detail on these maps has been thinned. These charts are accurate enough for general navigation. 

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In summary, locational manipulation appears to be prevalent on all maps of the USSR which the Soviet Government has released for general distribution since 1964.

It is limited, however, to areas within the Soviet Union.



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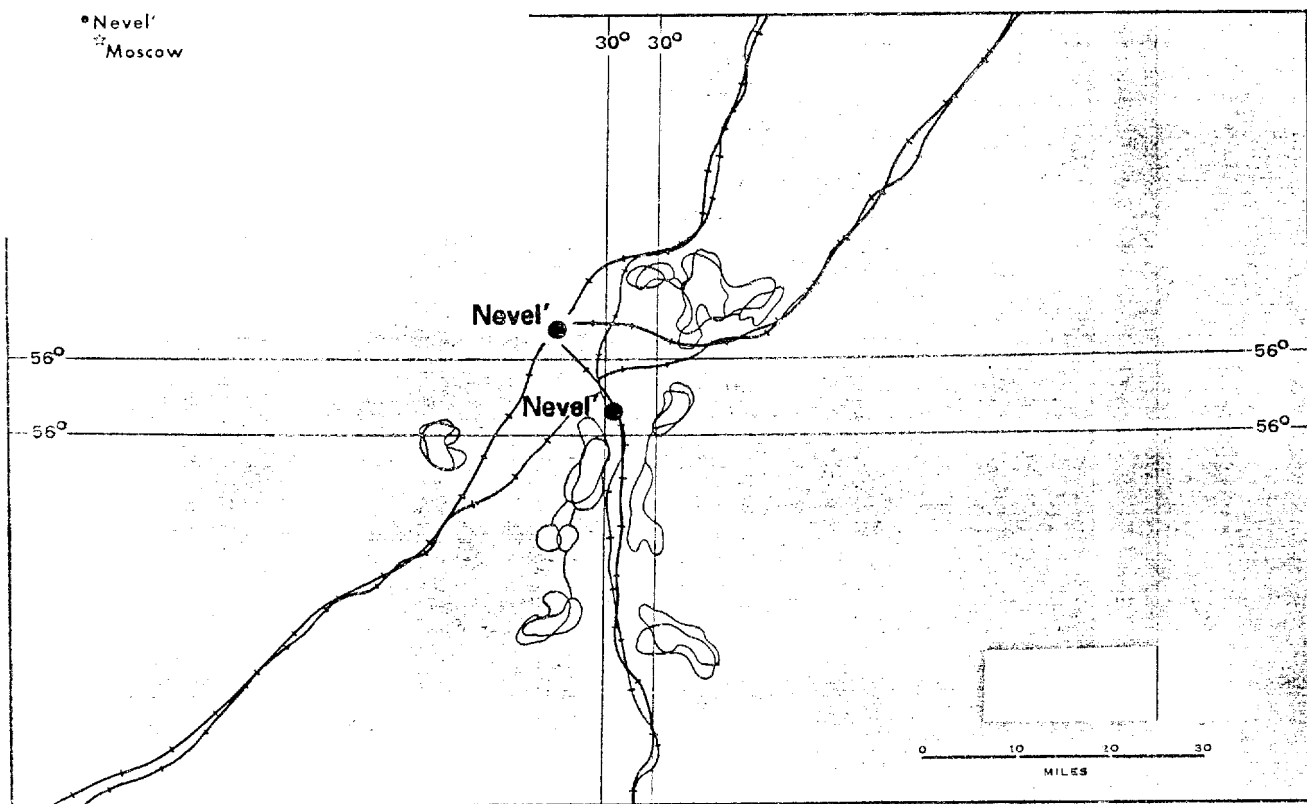


Figure 1 NEVEL' AREA. The extent of locational distortion in the 1967 Soviet World Atlas is demonstrated by contrasting its map of the Nevel' area (in red) with the corresponding map (in gray) contained in the 1954 edition of the Atlas -- in this instance using the lakes as a control. Note the resulting shifts in the geographic grid and the town of Nevel'. The railroad lines have been twisted out of their true alignment, with one line cutting across a lake which has been conveniently distorted in the 1967 Atlas.